

Sessions 3-5

Ongoing Training							
Session 3	(2 hours)		Session 4	(2 hours)		Session 5	(2 hours)
Video: The Crossing off Factors Game	45-60		Video: Working with Two Students	45-60		Video: Area and Perimeter	45-60
Break	15		Break	15		Break	15
Data	45-60		Data	45-60		Data	45-60
Other topics			Other topics			Other topics	

Each of the follow-up training sessions serves both as a check-in point for mathematics mentors in your program as well as an ongoing learning opportunity. These training sessions have been structured so that about half the session is spent on discussions around video segments we have provided, and about half the session is spent on activities related to the mentors' own experiences thus far. As you plan your own training sessions, decide what would benefit your mentors the most. Below is information about the types of concerns your mentors may face, which may help you as you plan these training sessions. Following the information about mentor concerns are outlines for the three different video activities, as well as outlines and materials for many different activities from which you can choose to address the mentors own experiences.

Types of Concern

Over the past few decades in the field of education, numerous innovations have been introduced—in curriculum, instruction, technology, assessment, etc. The number of innovations has allowed ample study of what happens when those entrusted with using the innovations (usually teachers) undertake to use them. One line of study has concentrated on the concerns that arise among users, and how they and their concerns change as they engage with a particular innovation.

The research has pointed to several aspects of change in education:

- Change is a process, not an event
- The individual’s needs require attention
- Change is highly personal
- Change process is developmental
- Diagnostic/prescriptive thinking contributes to productive change

The so-called Concerns-Based Adoption Model, developed from this research, seems adaptable to mentors using innovative materials like the MathPartners materials. It describes a hierarchy of concern types, which users of an innovation progress through (at individual rates). Part of this hierarchy seems appropriate for understanding the concerns of mathematics tutors and mentors—particularly those who engage with the MathPartners materials. The following diagram describes what mentors in five hierarchical stages might struggle with and how they might express their concerns:

Type of Concern	General Description	Examples of Expression of Concerns
1. <i>Informational</i>	Mentor focuses on learning more about mentoring and the MathPartners program	“What’s special about this approach?” “How much am I expected to use those materials?” “How do I find out what to do with the students?”
2. <i>Personal</i>	Mentor focuses on his/her role, the demands of the program, and his/her adequacy to meet the demands	“I can’t decide what materials to use.” “I can’t connect the materials to what the kid is bringing to

3. <i>Management</i>	Mentor focuses on efficiency, organization, management, time, best uses of resources	me.” “I can’t seem to get beyond the homework she’s bringing in.” “The assessments are taking too much time.” “There seems to be too much in that unit.” “I can’t seem to maintain any continuity from week to week.”
4. <i>Consequence</i>	Mentor focuses on the impact on students	“How can I tell if I’m really helping him?” “Is the emphasis of the materials on understanding the math really giving her the skills she needs?”
5. <i>Collaboration</i>	Mentor focuses on coordination and cooperation with others	“How can I best coordinate with the child’s teacher?” “What can I learn from other mentors about the use of these geometry materials?”

We offer this model because we believe it can help you as facilitator understand the range of concerns arising for your mentors and, more to the point, help you to help them with their concerns. To employ the model, we recommend that you contact a cross-section of your mentors not long before each of the follow-up days of mentor training—after they have had at least a few tutoring experiences—and ask them two questions:

1. When you think about tutoring mathematics, what are your concerns?
2. When you think about using the MathPartners materials, what are your concerns?

Ideally, you would like to have them write their answers, but you may end up recording what you hear. If you have ten or so responses to analyze, you can begin to get a flavor for the kinds of concerns.

It is unlikely that you will hear any collaboration concerns at this early point in your program, and the consequence concerns also may be few. On the other hand, it is likely that there will be a mix of information, personal, and management concerns. In our experience, it is valuable to categorize because of the different responses that each category invites:

- Any information concerns you identify will require you to come to the second day of training with ample information in the areas of concern
- Personal concerns can be subtler in their implications. For example, a mentor's expressions of inadequacy about mathematics content may require that the mentor move to earlier grades. On the other hand, depending on the nature of the concern, it may suffice to pair the mentor with another mentor at the same grade level, for support.
- Management concerns often point to the need for the group to revisit expectations and logistical planning. Similarly, if you cite the identified management concerns to the whole group, you may find that other mentors have already figured ways to deal with the concerns.

Session Three Mentoring Video Activity: The Crossing Off Factors Game
(45-60 minutes)

Watch The Crossing off Factors Game video (10 minutes) Consider the following questions as you watch this videotape of a mentor and child working together. (Make notes on the “Questions to Consider” handout.)

- What are you learning about the child in this clip?
- How does the tutor use the MathPartners materials to address difficulties she sees the student having?

Pairs discussion (15-20 minutes) then full group discussion (20-35 minutes) Discuss those same questions that you considered during your viewing of the mentoring session videotape. Focus on the evidence seen in the video.

Facilitator: Handout copies of the Questions to Consider page. Explain that they will watch a videotape of mentors working with students and that these are the kinds of questions that they should think about as they watch the videotape. Ask mentors to focus on what they notice about the student and on mentoring strategies rather than on critiquing the mentor.

Facilitator: Lead a full group discussion of the learning difficulties that the child in the videotape was facing and of the mentoring strategies the mentor employed. Encourage mentors to give evidence to back up their suggestions of what learning difficulties the child is having.

Facilitator: Ask mentors to consider their own mentoring experiences, and the learning difficulties that they saw with their students. Mentors should once again focus on giving evidence to support their ideas about the learning difficulties that students had.

Optional: Simulation Activity

Facilitator: Should you decide you want to incorporate a simulation activity, choose a point in the videotape when the child gets something wrong or otherwise is having difficulty. Have the mentors pair up. One in each pair chooses to be the student and the other the mentor. Have the pairs simulate alternative ways that the mentor and student could follow up on the chosen student difficulty.

Session Four Mentoring Video Activity: Working With Two Students
(45-60 minutes)

Watch the Working With Two Students video (5 minutes) Consider the following question as you watch a videotape of a mentor working with two children. (Make notes on the “Question to Consider” handout.)

- What are the advantages and disadvantages to having these two students work together?

Pairs discussion (15-20 minutes) then full group discussion (20-35 minutes) In pairs or small groups, and then as a full group, discuss the following two questions:

- What are the advantages and disadvantages to having these two students (the students in the video) work together?
- What strategies and activities work well when you are working with multiple students?

Facilitator: Handout copies of the Question to Consider page. Explain that they will watch a videotape of a mentor working with two students. Ask mentors to focus on what they notice about the student and on mentoring strategies rather than on critiquing the mentor.

Facilitator: Have mentors talk in pairs for a while, and then lead a full group discussion about working with multiple students at once. Encourage mentors to give evidence to back up their statements.

Optional: Simulation Activity

Facilitator: Should you decide you want to incorporate a simulation activity, choose a point in the videotape when the child gets something wrong or otherwise is having difficulty. Have the mentors pair up. One in each pair chooses to be the student and the other the mentor. Have the pairs simulate alternative ways that the mentor and student could follow up on the chosen student difficulty. Distribute copies of the mentor and student role sheets found on pages 42 and 43 of the pre-training activities if you think they will be helpful for this role play.

Working With Two Students Video Question to Consider

- . What are some of the advantages and disadvantages of having these two students work together?

Session Five Mentoring Video Activity: Area and Perimeter
(45-60 minutes)

Watch the video segments called Area and Perimeter (20 minutes) Consider the following questions as you watch the Area and Perimeter video segments. (Make notes on the “Questions to Consider” handout.)

- Area video: What are some indicators that the child in this video understands what area is?
- Perimeter video: Some children in the middle grades confuse area and perimeter. Do you see this child having any difficulties with this?

Pairs discussion (15-20 minutes) then full group discussion (20-35 minutes) In pairs, discuss those same questions that you considered during your viewing of the mentoring session videotape. Focus on the evidence seen in the video. Then, as a full group discuss these questions, as well as the following question:

- What difficulties around measurement have you noticed your own students having?

Facilitator: Handout copies of the Questions to Consider page. Explain that they will watch two video segments of a mentor working with a student. Ask mentors to focus on what they notice about the student and on mentoring strategies rather than on critiquing the mentor.

Facilitator: After mentors have had some time to discuss in pairs, lead a full group discussion of the learning difficulties that the child in the videotape was facing and issues that children face with area and perimeter. Encourage mentors to give evidence to back up their statements.

Optional: Simulation Activity

Facilitator: Should you decide you want to incorporate a simulation activity, choose a point in the videotape when the child gets something wrong or otherwise is having difficulty. Have the mentors pair up. One in each pair chooses to be the student and the other the mentor. Have the pairs simulate alternative ways that the mentor and student could follow up on the chosen student difficulty. Distribute copies of the mentor and student role sheets found on pages 42 and 43 of the pre-training activities if you think they will be helpful for this role play.

Data Activities
(45-60 minutes)

Determine current issues for mentors (10-20 minutes)

Pairs discussion (15-20 minutes) then full group discussion (20-35 minutes) of these issues; or, use one of the provided activities from the Toolkit of activities.

Toolkit of activities to do in ongoing training sessions:

During the second part of each follow-up training session, you may choose to lead discussions about current issues that your tutors are facing. Some specific activities with which you could engage tutors during these follow-up sessions are described in the Toolkit of Activities. These include:

- Behavioral Issues and Consequences
- Mathematical Conceptual Difficulties
- Role Playing
- Mathematical Content
- Additional Uses of Videos

Toolkit of Activities for Follow-Up Training Sessions

Behavioral Issues and Consequences

In a mathematics mentoring situation, mentors are going to need to deal with behavioral issues in addition to mathematical conceptual difficulties. If you have not already done so, or if your mentors feel that they are particularly struggling with their students around behavioral issues, then you may want to have a discussion centered around these issues. One model for this type of conversation can be seen in the video clips called *A Uniform Approach to Misbehavior* and *What You Can Do About Misbehavior*, in which a school volunteer coordinator works with a group of mathematics mentors.

The basic steps in the activity seen in the video are:

1. Ask mentors to discuss the kinds of behaviors that students might display that are minor, serious, and unacceptable. Track the ideas discussed on a chart with a column for each category of offense.
2. As behaviors are listed on the chart, spend some time discussing differences of opinion about whether particular behaviors are minor, serious, or unacceptable. Discuss in what context a behavior would fall into different categories.
3. Talk about possible consequences for behaviors in each category.
4. Discuss the need for a shared understanding among mentors and students about behavior, so that everyone knows what to expect and consequences are consistent.

Mathematical Conceptual Difficulties

In the MathPartners Mentor Notes are found examples of the types of conceptual difficulties that students often have in each content strand. You may choose to lead discussions about these readings.

Role Playing

One strategy for dealing with questions and concerns that your mentors bring to the follow-up training meetings is to do role plays. Frame the question or concern for the group and then have pairs or small groups act out different possibilities of ways to deal with the particular situation. If you use a role play in one of your follow-up training sessions, make distribute copies of the mentor and student role sheets found in the pre-training materials on pages 42 and 43 for reference.

Mathematical Content

If mentors are feeling less comfortable with a particular content strand, or if many of the mentors are about to start a new content strand with their students, it may be a good time to do one or two activities from that content strand together as a group of mentors. Use the opportunity to discuss the different strategies and ideas that the mentors have as they work on the activities, and what they might want to focus on when they work with students.

Additional Uses of Videos

You may find that certain concerns or questions that mentors bring back to the follow-up training meetings are related to the content of some of the video clips on the MathPartners video. Short descriptions of each of the video segments can help you determine if particular video segments would be useful in helping mentors think through their dilemmas. One way to use a relevant video segment is to stop the segment at some point (or after it is finished) and ask mentors to reflect on and/or role play various possibilities of what could happen next. Another way to use the video segments is to ask mentors to track particular ideas as they watch (such as the questions the mentor asks, or the strategies the mentor uses, or the ideas the student struggles with, and so on.)